

Vermont Forest Health

Insect and Disease Observations— June 2018

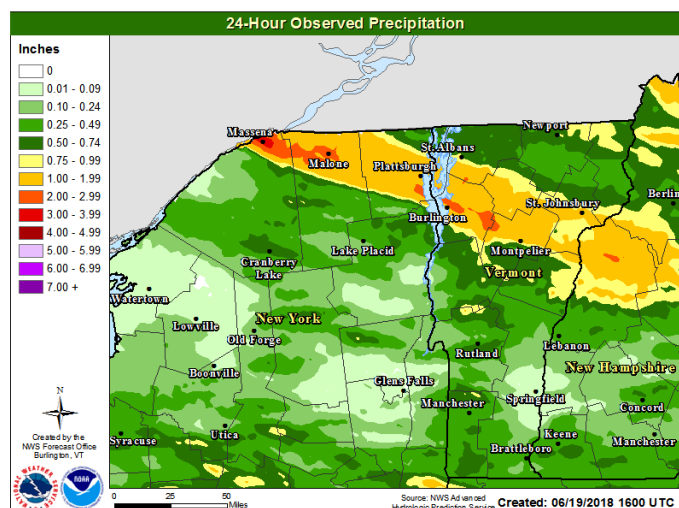
Department of Forests, Parks & Recreation
June 2018

vtforest.com

Weather Observations

June saw some temperature swings. Day one was hot, but cool and unsettled weather followed during the first week. Chilly lows with patchy frost in the usual cold pockets were recorded on June 11 and 22.

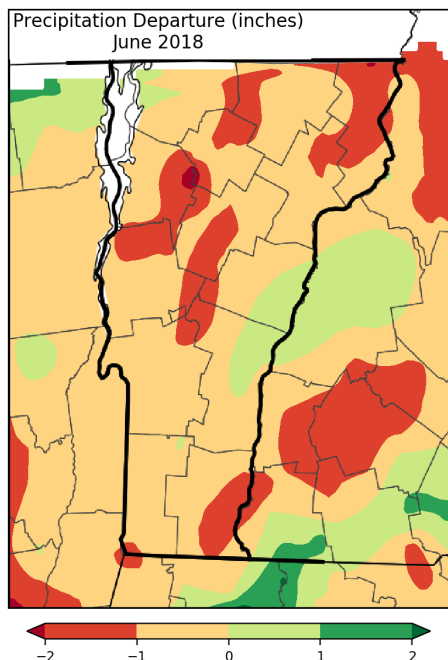
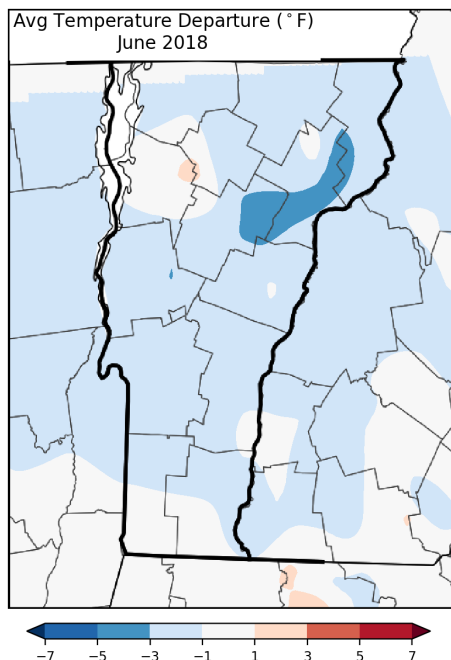
Warm and comfortable temps turned hot and humid with hit or miss severe storms resulting. One of these severe storms hit Vermont during the afternoon hours of June 18, when scattered strong-to-locally-severe storms tracked across the region. According to the National Weather Service, "A warm, moist tropical air mass (from the remnants of Hurricane Bud) was in place over New England and New York ahead of a cold front sagging south from Canada. Due to the moist characteristics of the air mass, storms that did develop produced very heavy rainfall rates, along with several damaging wet microbursts. These severe storms caused up to 16,000 people in Vermont to lose power. The strongest microburst produced significant property damage and downed 3 to 4 dozen trees in the vicinity of Waitsfield, VT." East Topsham and Newbury were also hard hit.



The microburst damage path was over a mile long and up to a quarter mile wide, and extended from the ridgeline on Hemlock Hill across the Mad River Valley to near the base of Mt. Waitsfield.

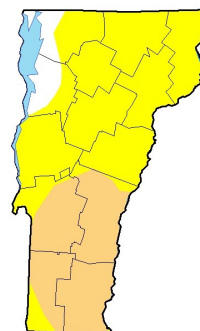
The storm also brought some much needed rain to the state. Rainfall amounts varied but some of the heaviest rain totals included, 2.29" in Burlington, 1.83" in Plainfield, 1.81" in Middlesex, 1.44" in Jericho and 1.51" in Worcester. Despite the intensity in some locations, the rain was welcome. June was drier than normal for the month. On June 19, most of the state was abnormally dry. A week later, the southern four counties were classified with moderate drought. Even after hard rain storms and scattered showers on June 13 and 18 and from June 27 to 29, the July 3 U.S. Drought Monitor remained unchanged from the week before.

The end of June marked the beginning of a heat wave, which extended into the early part of July. A significant record fell on July 2nd, when the temperature in Burlington, VT never fell below 80 degrees Fahrenheit. This establishes a new all-time record "high-minimum" temperature for any calendar day. The old record was 78F set several times previously.



U.S. Drought Monitor Vermont

July 3, 2018
(Released Thursday, Jul. 5, 2018)
Valid 8 a.m. EDT



Intensity:
 D0 Abnormally Dry
 D1 Moderate Drought
 D2 Severe Drought
 D3 Extreme Drought
 D4 Exceptional Drought

Author:
Richard Tinker
CPC/NIA/WSN/CEP

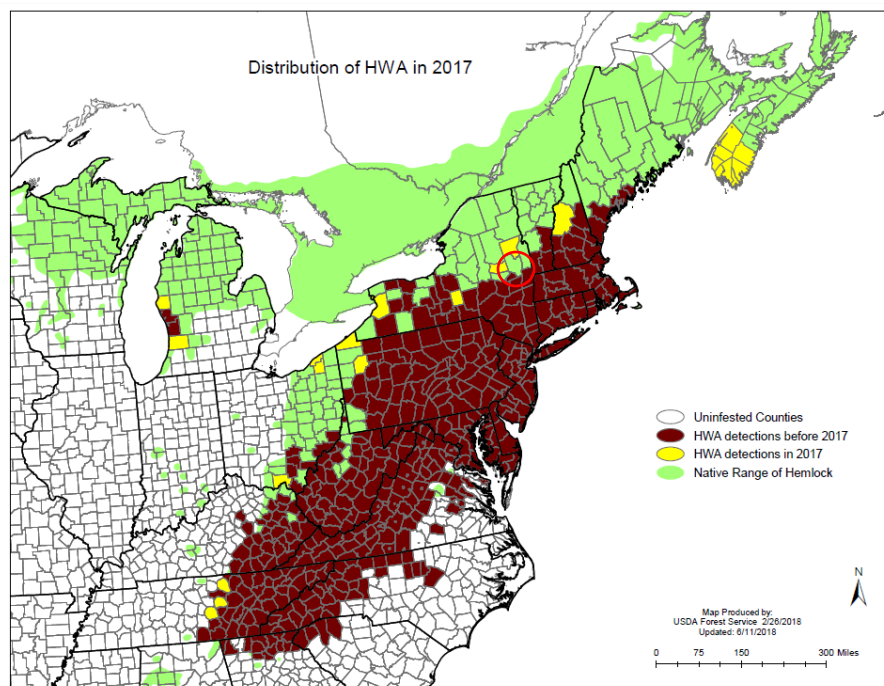
USDA
NOAA
NCEP
<http://droughtmonitor.unl.edu/>

Despite the end-of-month heat wave, June averaged cooler and drier than normal. Maps: North-east Regional Climate Center

Hemlock Woolly Adelgid

A new map of the known range of Hemlock Woolly Adelgid, as of 2017, has been prepared by the US Forest Service. Although we are not aware of any expansion of hemlock woolly adelgid within Vermont in 2018, in the month of June the insect was reported for the first time in Saratoga County in New York. If you want to learn more about the hemlock woolly adelgid, including management measures, visit our FPR Forest Health Library.

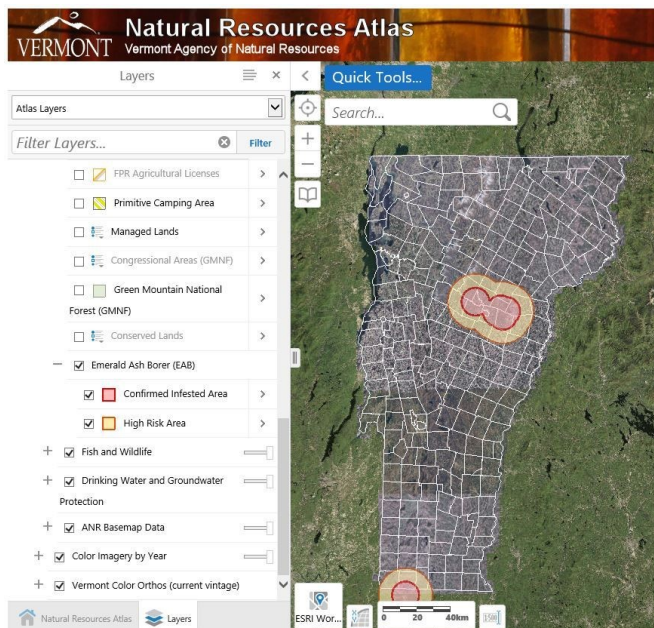
HWA was observed near Vermont in Saratoga County, NY in June 2018 (red circle) Map: US Forest Service. Photo below: Chris Evans, University of Illinois, Bugwood.org.



More Emerald Ash Borer Found Just Outside Vermont

The Massachusetts Department of Conservation and Recreation recently confirmed an EAB detection in North Adams MA. The location is within three miles of the Vermont border. This puts parts of Stamford, Pownal, and Readsboro within five miles of a known infestation, and parts of Woodford, Whitingham, and Bennington within ten miles.

The online map of the EAB Infested Area, accessible through [vtinvasives](https://vtinvasives.org) and the [ANR Atlas](#) has been updated. [EAB Slow the Spread recommendations](#) would now apply to movement from the Confirmed Infested and High Risk Areas in southwestern Vermont, as well as previously identified areas. It's important to be especially vigilant for [signs and symptoms of EAB](#) in the vicinity of these known infestations. To confirm identification and to assist with EAB slow-the-spread efforts, suspect ash trees can be reported at [vtinvasives](https://vtinvasives.org).



EAB has been detected just south of Stamford in North Adams, Massachusetts. Slow the spread recommendations apply to movement from Confirmed Infested and High Risk Areas in southwestern Vermont, as well as previously identified areas. (Map accessed 7/6/18.)

For those that were not able to attend the June 20th webinar, *Silvicultural Considerations for Vermont's Ash within the Context of EAB*, it is available [here](#). The webinar was presented by Tony D'Amato, Associate Professor of Silviculture and Applied Forest Ecology at UVM's Rubenstein School, and provided helpful information on the role of ash in northern hardwood forests, what ash needs to regenerate successfully, and silvicultural considerations for future forest composition and structure.

An EAB Public Information Meeting will be held on Wednesday, July 11 at 6:30 PM in Montpelier. The meeting will include updates on the federal quarantine for emerald ash borer, current status/delineation of infested area, slow the spread recommendations, plans for disposal sites, outreach and education by sector, future steps, and a question and answer session. This meeting will be live streamed and recorded on Facebook. For more information: <https://vtinvasives.org/news-events/events/eab-public-information-meeting>.

A half-day training session, EAB Update and Treatment Options for Arborists, will be held on Wednesday July 25th in Randolph starting at 9:00 AM. Vermont Urban & Community Forestry Program staff will be joined by Phil Lewis, Program Leader of the Insecticide and Applied Technologies Section with USDA APHIS, to discuss and demonstrate available insecticide treatment options for EAB. This workshop is intended for professional arborists practicing in Vermont, as well as Tree Wardens. For more information: <https://vtcommunityforestry.org/news/events/eab-update-and-treatment-options-arborists>.

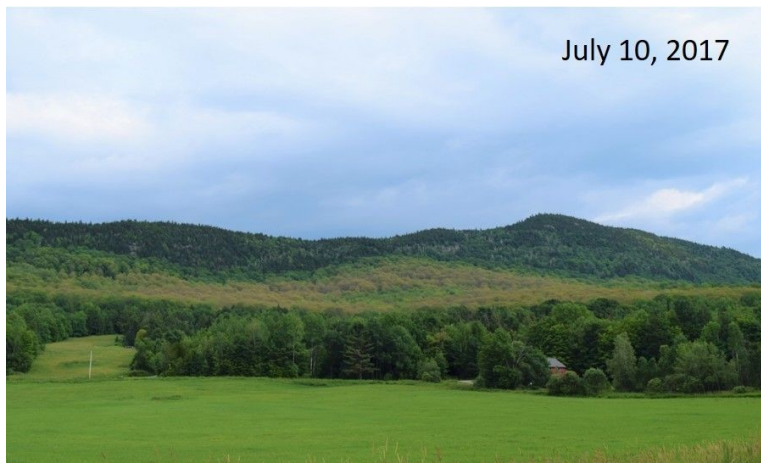
Forest Tent Caterpillar Update

Tree decline and mortality is visible in some locations where multiple years of forest tent caterpillar (FTC) defoliation and droughty conditions were present. Locations with shallow soils, overtapping and tapping of small trees, and sites near upper slopes or that feature sugar maple almost exclusively have suffered greater mortality. In some impacted areas, trees never leafed out in 2018. Recent reports of areas where FTC-related decline has been observed include locations in Orleans, Lamoille, Caledonia, and northern Franklin Counties.

Defoliation is complete for 2018. Aerial surveys will be conducted in the coming weeks, enabling a broader view of defoliation and maple dieback across the landscape.

Treatments were completed in June in properties where landowners had heavy defoliation predicted and chose to have foliage protected with Btk. We will be conducting evaluations in several treated and untreated sugarbushes to evaluate defoliation severity.

This area in Lamoille County was photographed by a drone. It shows some of the area that where a salvage operation is planned in wake of the mortality that was experienced following FTC. Tapping had been planned for the area but the FTC infestation altered plans. It had not been tapped previously and no cutting had been done for over 15 years. Photo: Ruth Goodrich, Eden.



Some areas that were defoliated in 2016 and 2017 have shown some recovery as seen here on Elmore Mountain. Photos: Mark Isselhardt

Conifer Diseases

White Pine Needle Damage (WPND) showed up, later than normal, in early June. Bright yellow one-year-old needles were widely observed, especially in the lower crowns of susceptible trees. Due to windy weather, yellow needles also dropped quickly on many of the affected trees, leaving a carpet of newly cast needles in pine stands.

The symptoms have been attributed to several different needle-infecting fungi. Spring weather has also been shown to play a role. Recently published research indicates that WPND reduces increment growth, especially for smaller diameter trees, and that thinning may reduce the severity of WPND. The authors suggest that the distance between crowns and increased light exposure may limit fungus dispersal. (McIntire, C. et al. 2018. [Thinning treatments reduce severity of foliar pathogens in eastern white pine](#). Forest Ecology and Management).

Long term monitoring plots continue to demonstrate that susceptibility varies between individual trees. Vermont is participating in a regionwide forest health evaluation monitoring survey to better understand the causes and impact of this recurring health problem.



White pine needles carpeted some pine stands affected by white pine needle maladies. Cones, chlorosis and thin crowns are typical in some white pine stands, like this one in Plymouth. (Photos B. Schultz)

Lirula Needlecast was observed on balsam fir in a Christmas tree plantation in Leicester. Ron Kelley, former FPR Forest Health Specialist and active Christmas tree insect and disease diagnostician, reported that he has seen more cases of *Lirula* over time, and that it seems to presently be more common than *Rhizosphaera* in some parts of the state. Ron had recently observed a heavy infection of *Lirula* on Fraser fir tree farm in NH, the first time he'd seen it this heavy on that host.



Lirula fruiting on the underside of Canaan fir. Photo: R. Kelley

Vermont Native Plants vs. Invasive Plant Look-a-likes

At the height of summer, numerous plants are in bloom. Also in bloom are the reported sightings of invasive plants. While many reports correctly identify common culprits, like Wild parsnip and Japanese knotweed, suspected sightings of other invasive plants increase because of native plant look-a-likes.

One such case features the invasive plant [Giant hogweed \(*Heracleum mantegazzianum*\)](#). This plant, which reaches heights of 7-20 ft., with leaves up to 5 ft. across, flower clusters up to 2.5 ft. across, and stems with purple splotches, was introduced in the early 20th century, originating from the Caucasus Mountains and Asia.

When late June and early July roll around in Vermont, Hogweed's native plant look-a-like, American cow-parsnip (*Heracleum maximum*), is also flowering. Both plants have large white flower heads.

A few quick ways to determine what you're observing include general size (Hogweed is truly towering), the shape of the flower clusters (Hogweed has an "umbrella" shape, American cow-parsnip is "flat topped"), presence of coarse white hairs at the base of the leaf stalk (American cow-parsnip lacks these coarse almost beard-like hairs, but is still hairy), and number of rays within the flower cluster (Hogweed has 50 or more rays within the flower cluster while American cow-parsnip has only 15-30). [Here is a great resource to compare other native plant look-a-likes to hogweed from New York DEC.](#)

[While contact with both American cow-parsnip and Giant hogweed can cause a rash or burn, Hogweed sap can trigger a severe chemical reaction on exposed skin, and even cause blindness.](#) Brushing up against this plant can transfer sap. This is more worrisome than exposure to Wild parsnip, Wild chervil or American cow-parsnip, where you have to break the plant tissue to come in contact with the sap. [Giant hogweed is a federally listed noxious weed.](#)

[Check out this site if you'd like to learn more about the native plant, American cow-parsnip,](#) the United States' largest member of the carrot family. Another great resource for curious minds is "Mistaken Identity" published by the Delaware Department of Agriculture.



Left: Purple, blotchy stem, paired with course white bristles are good indicators that this plant is invasive Giant Hogweed.

Right: Flat-topped flower heads of native plant, American Cow Parsnip.

Photo Credit: W. Ciesla, American Cow-parsnip, CC BY-NC 3.0 US, Rob Routledge, Sault College, Bugwood.org

More Fungi and Larvae

Branch flagging and mortality of young trees caused by [Dutch Elm Disease](#) was widely observed in June. Flagging starts with drooping and yellowing of leaves on isolated branches, which soon turn brown.

Three wood decay fungi seem to have fruited prolifically this spring. *Polyporus squamosus* and *Ganoderma lucidum* fruit on hardwoods, while *Ganoderma tsugae* has been widely reported on hemlocks. The reports may be inspired by interest in potential medicinal properties of the *Ganoderma* species.



It's been a good season for *Polyporus squamosus* (Dryad's Saddle), *Ganoderma lucidum* (Ganoderma root and butt rot) and *Ganoderma tsugae* (Hemlock Varnish Shelf). Photos: C.E. Young, The Ohio State University, [Bugwood.org](#); E.L. Barnard, Florida Dept of Agriculture and Consumer Services, [Bugwood.org](#); J. OBrien, USDA Forest Service, [Bugwood.org](#)

[Mountain Ash Sawfly](#) larvae are gregariously feeding on ornamental trees. The veins and mid-ribs are not consumed.

[Euonymus caterpillars](#) are back with their dramatic looking [webs](#). Their preferred host is the spindletree. They show up early, since they overwinter as young caterpillars and start feeding first thing in the spring. There is only one generation per year.

[Satin moth](#) defoliation is, once again, heavy in a few isolated locations. Passers-by have noted the heavy defoliation on I-89 in the Northfield area.



Mountain ash sawfly, euonymus caterpillar and satin moth caterpillars can produce surprisingly dramatic defoliations. Photos: E.B. Walker, [Bugwood.org](#); S. Webster, and R. Kelley, [Bugwood.org](#)

What Comes to Light

This month, we received our first Vermont-acquired specimen of the so-called [European Hornet](#), *Vespa crabo*. Currently, its geographical range extends from the Northeastern states west to the Dakotas, and south to Louisiana and Florida, so it is not a surprise that it could occur in VT. Since the hornet is generally considered a forest inhabitant in North America, it's possible that the species is established in our region but that human encounters are few. The adult European Hornet will come to lights.



According to a [Penn State leaflet](#), "European Hornet workers are unique among the yellowjackets for their ability (actually a propensity) to forage at night. It is not unusual for workers to bounce off of external lights or house windowpanes during summer nights." Photo: Joe Bogg, OSU Extension.

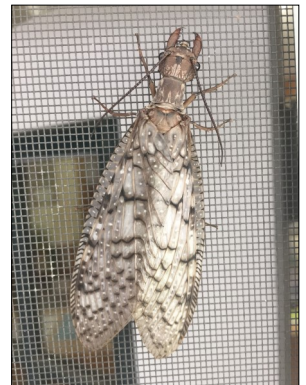
Other morning surprises brought to our attention lately included showy sphinx moths, including *Darapsa myron* (the Virginia Creeper or Hog Sphinx) and *Pachysphinx modesta*, (the Big Poplar or Modest Sphinx). In a [recently-published paper](#), researchers shed light on the status of this family of moths through analysis of collection records.



Two sphinx moth species showing wings closed (as they appear to the morning viewer) and open to display the showy hind wings: Virginia Creeper Sphinx, Photos: E.F. Wesley (closed), [J. Vargo](#); (open); Big Poplar Sphinx: J. Curtis (closed), [J. Vargo](#) (open)

Adult [dobsonflies](#) are active at night and have a strong attraction to light. Though the mandibles of the female are formidable in appearance, they are short compared to the large sickle-shaped mandibles of the male. These insects are fierce predators in the juvenile stage, but do not feed as adults.

The eastern dobsonfly can reach a length of 5 inches. Both males and females will lift their heads and spread their mandibles to discourage predators. Photo: J. Nerenberg



**For more information,
contact the Forest
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